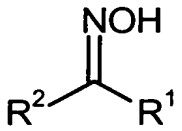
ABSTRACT

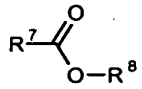
COMPOSITION AND PROCESS FOR THE EXTRACTION OF METALS

A solvent extraction composition is provided which comprises one or more orthohydroxyarylaldoximes or orthohydroxyarylketoximes and one or more esters substituted with a hydroxyl group, and preferably a water immiscible organic solvent. The orthohydroxyarylaldoximes, or orthohydroxyarylketoximes commonly have Formula (1),



Formula (1)

wherein R^1 is hydrogen or a hydrocarbyl group, and R^2 is an ortho-hydroxyaryl group; and the esters substituted with a hydroxyl group are of Formula (2),



Formula (2)

wherein one of R^7 or R^8 is a substituted hydrocarbyl group with at least one hydroxyl group and the other is an optionally substituted hydrocarbyl group. Preferred orthohydroxyarylaldoximes are 5-(C_9 to C_{14} alkyl)-2-hydroxybenzaldoximes and preferred orthohydroxyarylketoximes are 5-(C_9 to C_{14} alkyl)-2-hydroxyacetophenone oximes. Preferred esters substituted with a hydroxy group are highly-branched alkyl esters comprising from 5 to 51 carbon atoms, wherein the hydroxy group resides on R^8. Processes for the extraction of metal values from aqueous acidic and ammoniacal solutions are also provided.